

J. S. GAMMON.
RESILIENT WHEEL.
APPLICATION FILED JULY 16, 1910.

1,007,087.

Patented Oct. 31, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

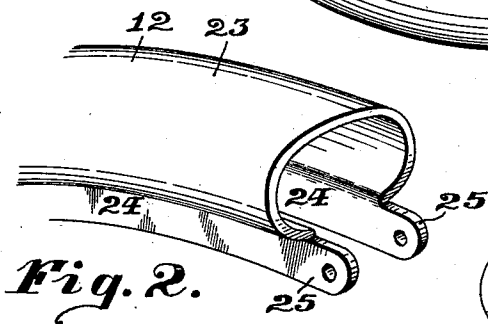
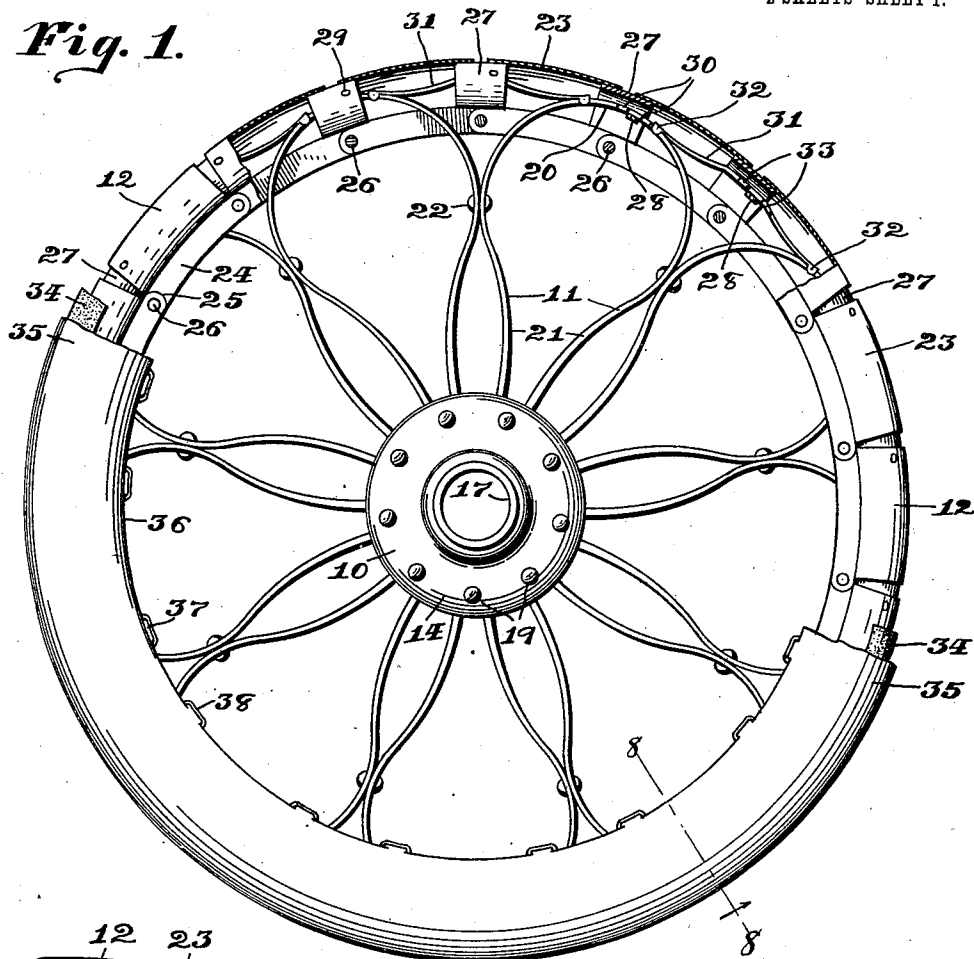


Fig. 2.

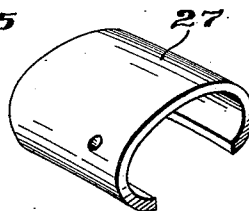


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 4.

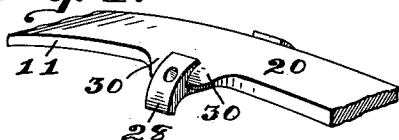


Fig. 5.

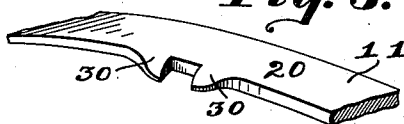


Fig. 7.

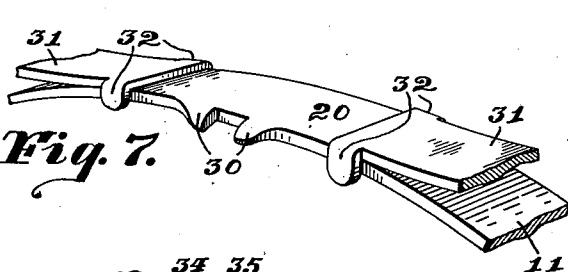


Fig. 6.

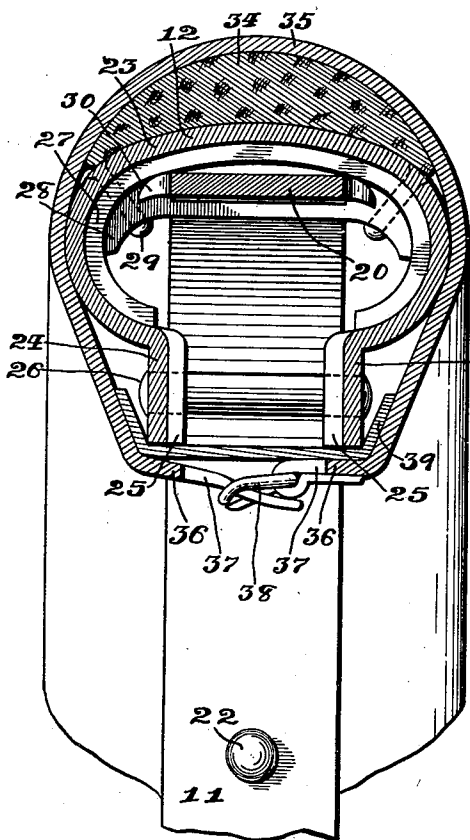
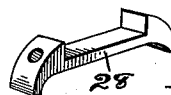


Fig. 8.

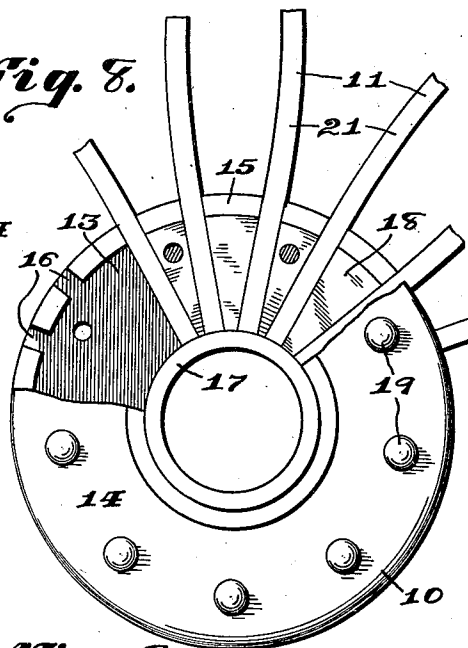


Fig. 9.

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RESILIENT WHEEL.

1,007,087.

Specification of Letters Patent.

Patented Oct. 31, 1911.

Application filed July 16, 1910. Serial No. 572,238.

To all whom it may concern:

Be it known that I, JAMES S. GAMMON, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma and State of Oklahoma, have invented certain new and useful Improvements in Resilient Wheels, of which the following is a full, clear, and exact description, reference being had to the annexed drawings.

10 This invention pertains to vehicle wheels, the object being to provide a wheel: first, which may be easily and cheaply constructed. Second, which will carry a moving vehicle more free from shocks or jolts than
15 other wheels of this class heretofore produced.

Other objects and advantages of the invention will be set forth in the ensuing description.

20 Referring to the accompanying drawings: Figure 1 is a side elevation of the wheel, with portions broken away to expose interior construction. Fig. 2 is a fragmental perspective view of one section of the wheel rim. Fig. 3 is a similar view of a closure, which is used at the joints of the rim sections of the wheel. Fig. 4 is a perspective view of the outer curved portion of one of the spokes, showing also a retaining clip associated therewith. Figs. 5 and 6
25 show separate views of the two parts which are shown in Fig. 4. Fig. 7 is a perspective view of the spoke portion which appears in Figs. 4 and 5, and also shows fragments of certain leaf springs associated therewith, the retaining clip being omitted. Fig. 8 is an enlarged sectional view taken on the line 8-8 of Fig. 1. Fig. 9 is an elevation view of the central portion of the wheel, with
30 portions broken away to expose interior construction.

Referring to the several figures, in all of which like characters of reference designate like parts, the improved wheel consists,
35 in part, of the hub 10, the spokes 11, and the rim 12. The hub 10 is composed of two disks or side members 13 and 14, one of said disks being provided with an inclosing flange 15 around its outer edge to extend

through the wheel and meet the opposite 50 disk. This flange 15 is provided at regular intervals with pairs of slots 16 through which the inner ends of the spokes 11 extend into the hub 10. The central opening of one disk portion 13 of the hub 10 is 55 flanged, as at 17, this flange extending clear through the central opening of the opposite disk and forming the thimble portion of the hub. In addition to the fastening of the spokes 11 in this manner, the spaces be-
60 tween said spokes inside the hub 10 are filled with wedge-shaped blocks of wood 18, the two disk portions 13 and 14 of the hub then being secured rigidly together by bolts or rivets 19 passing entirely through the 65 hub. Each spoke 11, of which there are nine in this instance, is made of a flat strip of resilient or spring material, preferably good grade spring steel, and consists of an outer substantially circular portion 20, 70 whose end portions 21 extend inward into the hub 10, said end portions being curved in reverse relation to said outer curved portion 20 in order to be yieldable and to enter the hub more nearly parallel with each 75 other. The outer curved portion of each spoke 11 is secured in permanent contact with the corresponding portion of the next spoke by a rivet 22, so that part of the weight or strain brought against the outer 80 curved portion of one spoke is transferred to those adjoining.

The rim 12 of the wheel is composed of a plurality of sections 23, which are pivoted together on lines of axis parallel with the 85 axis of revolution of the wheel, there being two rim sections 23 to each spoke 11. The rim 12 is substantially C-shaped in cross-section, as best shown in Figs. 2 and 8, each edge of said rim being provided 90 with a flange 24 extending inwardly of the wheel. These flanges 24 on each rim section 23 extend beyond the ends of said section, as best shown in Figs. 1 and 2, in order to form pivotal lugs 25, the pivot-pin 26 95 connecting the lugs of one section with those of the next. To close the openings left at the points of pivotal connection of the rim

sections 23, C-shaped closures 27, shown separately in Fig. 3, are employed, and are held in place by means later shown.

In the assemblage of the wheel, the rim 12 is placed astride the outer portions of the spokes 11, alternate pivotal joints of said rim being positioned centrally of the outer curved portions 20 of said spokes, and the remaining pivotal joints between said spokes. In supporting the rim 12, the outer curved portions of the spokes 11 rest in and against the C-shaped closures 27, as best shown in Figs. 1 and 8, and are retained in place in said closures by clips 28, shown separately in Fig. 6. These clips 28 are held in place by rivets 29, which pass through said clips, through said closures, and through one of the two sections which are pivoted to that point. In order not to slide through the clips 28, the spokes 11 are provided with projecting lugs 30, as best shown in Figs. 4, 7, and 8. To support the rim 12 at the pivotal points between the spokes 11, bow-shaped leaf springs 31 are employed, the ends of said springs resting upon the outer curved portions 20 of the adjacent spokes 11, as best shown in Figs. 1 and 7. The ends of these leaf springs 31 are provided with lugs 32 to prevent their lateral displacement with relation to the spokes 11. In supporting the rim 12, the central portions of these leaf springs 31 rest in and against the C-shaped closures 27, in the same manner as do the spokes 11, and are also retained in place in said closures by the clips 28. Like the spokes 11, the central portions of the leaf springs 31 are provided with lugs 33 to prevent them from sliding through the clips 28.

In order that the wheel shall be more nearly noiseless in use, and in order to add to its resiliency, the outer surface of the rim 12 is covered by a cushion 34 of rubber or other elastic material, so that, taken together, said rim and cushion are substantially circular in cross-section. The cushion 34 and rim 12 are then inclosed by a jacket 35 of leather or other suitable flexible material. The edges 36 of this jacket 35 are provided at regular intervals with flexible straps 37, and the straps on one edge are provided with buckles 38 which engage the straps of the other edge to hold the jacket in place. However, before buckling the jacket 35 in place, a strip 39 of leather, rubber, or other suitable material is put in place to close the inner or open side of the rim 12. One edge of this strip 39 may be sewed or riveted permanently to the jacket 35, and said strip is slotted to allow the spokes 11 to pass through it.

In constructing the wheel in the manner described, the support given the rim 12 in a radial direction is yieldable at all the

pivotal points of said rim, thereby accomplishing the objects of the invention.

The foregoing being a full, clear, and exact description of the invention, what I claim and desire to secure by Letters Patent is:

1. In a resilient wheel, a hub, a rim comprising sections pivoted together, spokes supporting alternate pivotal points of said rim from said hub, said spokes each comprising a portion of resilient material having its central portion formed into a curve to support its respective pivotal point of said rim, the ends of the portion of material forming said spoke being inserted into said hub, and means carried by the outer curved portions of said spokes to support the remaining pivotal points of said rim.

2. In a resilient wheel, a hub, a rim comprising sections pivoted together, yieldable spokes supporting alternate pivotal points of said rim from said hub, and a resilient member spanning the space from the outer end of one spoke to that of the next and carried thereby to support the pivotal point of said rim between said spokes.

3. In a resilient wheel, a hub, a rim comprising sections pivoted together, spokes supporting alternate pivotal points of said rim from said hub, said spokes each comprising a portion of elastic material having its central portion formed into a curve to support its respective pivotal point of said rim, the ends of the portion of material forming said spokes being inserted into said hub, a spring member extending from the outer curved portion of one spoke to that of the next and having its ends supported on said curved portions, the central portion of said spring member supporting the pivotal point of the rim between those supported by said spokes.

4. In a resilient wheel, a hub, a rim comprising sections pivoted together, each section of the rim having flanges at its edges extending inwardly of the wheel, the flanges of one section of the rim extending beyond the end thereof and being pivoted to the flanges of the next section, a closure plate independent of the rim sections between the flanges thereof to close the joint at each pivotal point of the rim, and yieldable spoke members extending from the hub and secured to said closure plates.

5. In a resilient wheel, a hub, a rim comprising sections pivoted together, each section of the rim having flanges at its edges extending inwardly of the wheel, the flanges of one section of the rim extending beyond the end thereof and being pivoted to the flanges of the next section, a closure plate between the flanges of the rim sections at each pivotal point of the rim, spokes extending from the hub and bearing against said

closure plates, each spoke comprising a portion of resilient material having its central portion formed into a curve to support the rim, the ends of the portion of material
5 forming said spoke being inserted into the hub, the outer or curved portion of said spoke resting against said closure plate and being secured thereto by a clip, said clip being secured to said closure plate by rivets,

said rivets passing through said closure plate 10 and through one of the joined sections of the rim.

Witness my hand this 21 day of May, 1910.

JAMES S. GAMMON.

Witnesses:

H. C. ADAMS,

JOHN V. DAPPERT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."